

Communicable Disease Prevention in Child Care Centers

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Prevention Measures

- ▶ Hand washing .2803
- ▶ Communicable Diseases and Conditions .2827
- ▶ Sick child policy
- ▶ Toy Cleaning .2822
- ▶ Sink/Toilet/Counter Sanitation .2817, .2818
- ▶ Diapering Area Disinfection .2819
- ▶ Proper Food Handling .2806, .2807, 2808
- ▶ Separate Storage for Clothes .2820

Control Measures

- ▶ The spread of infection in child care can be controlled if all staff, students and visitors adhere to basic hygiene measures.
- ▶ Sick policies.
- ▶ Proper hand washing.
- ▶ Proper wound management.
- ▶ Follow NC child care rules and Executive Orders for sanitation of toys and other shared items.



Child Care in America (Prepandemic)

- ▶ Over half of U.S. mothers with children less than six years old work outside their home.
- ▶ Sixty percent of the children of moms working outside the home receive care in a setting other than their home.





- 4,607 licensed child care centers
- 246,622 children enrolled in licensed
- child care centers

- ▶ <https://ncchildcare.ncdhhs.gov/County/Child-Care-Snapshot>
- ▶ Source, Division of Child Development and Early Education Monthly Statistical Summary Report – May 2017
Number of Children Served Receiving Subsidy – 63,509

Impact and Cost of Illness

- ▶ Child illness accounted for 40 per cent of parental absenteeism from work.
- ▶ Children in child care are 30 percent more likely to contract a diarrheal illnesses than children cared for at home.
- ▶ Children in child care centers were 4.5 times more likely to be hospitalized than children in other settings.
- ▶ Employee workdays lost to illness cost US businesses between \$2 – \$12 billion/yr.
- ▶ Parents of children in child care centers miss an average of 1 to 4 weeks of work each year to care for their sick children.
- ▶ **WHAT YOU DO MAKES A DIFFERENCE!**

Illness associated with child day care: a study of incidence and cost.
D M Bell, D W Gleiber, A A Mercer, R Phifer, R H Guinter, A J Cohen, E U Epstein and M Narayanan.
Department of Pediatrics, Memphis State University.
<http://www.ajph.org/cgi/content/abstract/79/4/479?ck=nck>

CHILD ILLNESS – CAN YOU HEAR ME?

What is the most common childhood surgery performed under general anesthesia?

The average age for this procedure is one to three years old.

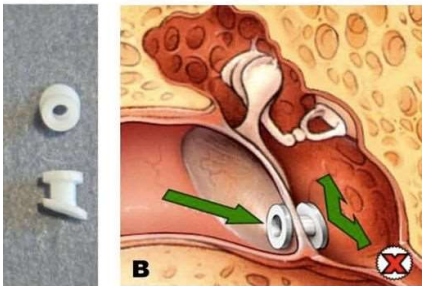
More than a million are performed in North America each year.

Ear tubes – tiny, hollow tubes, usually made of plastic or metal, that are surgically inserted into the eardrum creating an airway that ventilates the middle ear and prevents the accumulation of fluids behind the eardrum.

Doctors frequently recommend ear tubes if a child gets frequent ear infections or **if the condition affects hearing and speech.**

In children without tubes, ear infections are often treated with antibiotics by mouth or by injection. In children with tubes, the infection can drain out the tube and it can usually be treated with antibiotic eardrops.

Tubes last somewhere between six months and two years, and the body naturally pushes the tubes out into the ear canal on its own in most kids.



Seven percent of children in the U.S. receive a set of tubes by age three.

Risk Factors of Illness

- ▶ The strongest predictor of illness is the number of children in the room: crowded conditions and close contact
- ▶ Poor personal hygiene
- ▶ Limited immunity
- ▶ Mobility of teachers and students

▶ Illness associated with child day care: a study of incidence and cost. D M Bell, D W Gleiber, A A Mercer, R Phifer, R H Guinter, A J Cohen, E U Epstein and M Narayanan.

Risk Factors continued

- ▶ Inadequate infection control
- ▶ Understaffing
- ▶ Staff turnover averages 40%
- ▶ Lack of Training
- ▶ Animals and pets
- ▶ Spread of infection often occurs prior to recognition of symptoms

Modes of Transmission

- ▶ Fecal-Oral
- ▶ Airborne
- ▶ Close personal contact
- ▶ Blood
- ▶ Food and drinking water
- ▶ Surfaces
- ▶ Animal to human

COVID Cluster in childcare center

From: Bryant, Veronica M <veronica.bryant@dhhs.nc.gov>
Sent: Monday, July 13, 2020 7:17 PM
To: Regional EHS
Cc: Brown, W <w.david.brown@dhhs.nc.gov>; Blount, Kimly <kimly.blount@dhhs.nc.gov>
Subject: COVID cluster in childcare center

We were informed today of a cluster of COVID-19 in a childcare center. It's a Little Tots, it has children and staff with positive test results for COVID-19. Please work with your CD nurse to determine what is needed from EH for mitigation and control measures. Let me know if you need anything additional. Thank you for what you do.

Veronica Bryant, REHS
Emergency Preparedness and Outbreak Coordinator
Division of Public Health, Environmental Health Section
North Carolina Department of Health and Human Services

What is a COVID Cluster ?

- ▶ In a child care or school setting, a COVID-19 cluster is defined as a minimum of **five positive cases** identified through a positive molecular (PCR) or positive antigen test result with illness onsets or initial positive results within a 14-day period and plausible epidemiologic linkage between cases.

- ▶ **As of 03/26/2021 – Over 87 Clusters in NC**

▶ Source: COVID-19 Ongoing Clusters in Child Care and School Settings: Updated March 26, 2021

Interim Guidance for Child Care Settings

<https://covid19.ncdhhs.gov/media/220/download>

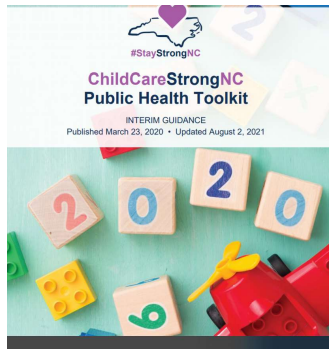
Transmission of COVID-19:

COVID-19 is spread by respiratory droplets released when people talk, cough, or sneeze.

The virus may also spread to hands from a contaminated surface and then to the nose or mouth, causing infection.

“...Personal prevention practices (such as handwashing and staying home when sick) and environmental cleaning and disinfection are important principles.....to help lower the risk of COVID-19 exposure and spread in child care settings.”

What's New in March: • Clarification on the use of the attestation form • Updated quarantine guidance • Clarification that professionals who support children with special health care needs and/or behavioral/mental health needs to provide services and/or assessment are allowed into child care facilities once screened and must adhere to health and safety guidelines by wearing face coverings and complying with social distancing recommendations • **Guidance regarding the use of water and sensory play** • Considerations for children who require asthma treatments



Water play in individual buckets, and sensory play (such as rice, beans, or playdough activities) using individually labelled supplies, and outdoor sand play is acceptable if social distancing measures can be maintained.

Outdoor water play using sprinklers is considered similar to playground usage and is allowed. However, water for outdoor play cannot be collected or recirculated and must drain quickly to avoid puddling.

COVID Policies Child Care Programs Are Required To:

- ☐ Maintain ratios
- ☐ Post signage
- ☐ Conduct a daily health screening of any person entering the building, including children, staff, family members, and other visitors to identify symptoms, diagnosis, or exposure to COVID-19.
- ☐ Not allow people to enter the child care facility if:
 - ▶ They have tested positive for COVID-19;
 - ▶ They are showing the following COVID-19 symptoms (fever, chills, shortness of breath, difficulty breathing, new cough, or new loss of taste or smell, GI upset);
 - ▶ They have recently had **close contact (within 6 feet, for 15 minutes or more)** with a person with COVID-19.

SlowCOVIDNC

Sep 22, 2020

The North Carolina Department of Health and Human Services launched a COVID-19 Exposure Notification app called 'SlowCOVIDNC'.

The app will help North Carolinians slow the spread of the virus by alerting them when they may have been exposed to someone who has tested positive for COVID-19. It is completely anonymous and does not collect, store or share personal information or location data.



The screenshot shows the SlowCOVIDNC website. At the top is a navigation bar with links: Home, About COVID-19, Dashboard, Latest Info, Information For, Guidance, and SlowCOVIDNC. The main content area features a yellow background with a blue box that says "Help Slow the Spread" and "Protect yourself, your loved ones and your community - simply by using your phone." To the right is the SlowCOVIDNC logo, which consists of a stylized 'C' made of concentric circles. Below the logo, the text reads "SlowCOVIDNC Exposure Notification App" and "It's easy. All you have to do is download SlowCOVIDNC and you can help slow the spread of COVID-19." At the bottom, the URL <https://covid19.ncdhhs.gov/slowcovidnc> is displayed.

<https://covid19.ncdhhs.gov/slowcovidnc>

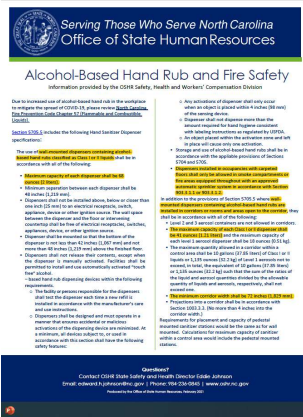
hand hygiene stations

Set up at the entrance of the facility, so that people can clean their hands before they enter. If a sink with soap and water is not available, provide hand sanitizer with at least 60 percent alcohol. Keep hand sanitizer out of children's reach and supervise use.

DHHS Hand Hygiene Stations



Wall-mounted 1-gal.
hand sanitizer
dispensers located in
corridors, maximum
volume of 41 oz



Cleaning – following a positive screening or developed symptoms

- ▶ Consult local health department
- ▶ Close off areas used by the individual
- ▶ Wait at least 24 hours before cleaning and disinfecting (includes vehicles)
- ▶ Consult your HVAC technician to increase fresh air circulation
- ▶ When possible, move educational activities outdoors
- ▶ Notify Veronica Bryant, Emergency Preparedness and Outbreak Coordinator (919-218-9643)
 - veronica.bryant@dhhs.nc.gov
- ▶ Use an EPA registered disinfectant that is active against Covid-19 to clean all areas

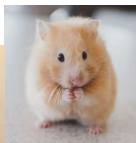
Required vs. Recommended in North Carolina

- ▶ All children in North Carolina **are required** to be vaccinated against:
 - [Diphtheria](#)
 - [Hepatitis B](#)
 - [Hib Disease](#)
 - [Measles](#)
 - [Meningococcal](#)
 - [Mumps](#)
 - [Pertussis](#) (whooping cough)
 - [Pneumococcal](#)
 - [Polio](#)
 - [Rubella](#)
 - [Tetanus](#)
 - [Varicella](#) (chickenpox)
- ▶ The **CDC also recommends** children be vaccinated against the following diseases, although immunization against these diseases is not required for children in North Carolina:
 - [Hepatitis A](#)
 - [Influenza](#)
 - [Rotavirus](#)
 - [Human Papillomavirus](#)

Executive Order #234 to provide temporary flexibility for required immunizations and health assessments

- ▶ To ensure that children are not excluded from school because of increased demands on health care providers amid the ongoing COVID-19 pandemic, Governor Roy Cooper issued a new [Executive Order #234](#) that suspends but does not waive documentation deadlines for proof-of-immunization and health assessment requirements for school and child-care facilities.
- ▶ In typical years, proof of required immunizations and health assessments are required within 30 days of the first date of attendance of school. After the 30 days, children are to be excluded from school until the family provides documentation of requirements. This year, the 30-day "grace period" for all students will begin on November 1, 2021. Extending these deadlines by will allow more time for families, schools and providers to facilitate access to needed immunizations and health assessments.

PETS











2004 State Fair



State faces E. coli lawsuit

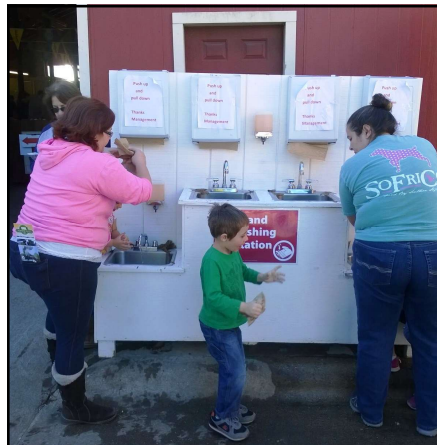
Posted on Tuesday, Aug. 02, 2011 - By JANE STANCILL

North Carolina failed to properly warn the public and reduce the health risks associated with a petting zoo at the 2004 State Fair, say attorneys representing 14 children who became ill after exposure to E. coli bacteria from animal feces.

Opening arguments began Monday in a case brought by families who say they were unaware of the risks of allowing their children into a petting zoo with farm animals...An outbreak of E. coli illnesses was traced to the Crossroads Petting Zoo at the fair in 2004. In all, **108 children reportedly suffered serious diarrhea**, and 15 of those came down with kidney failure a life-threatening complication that occurs in about 10 percent of those infected with E. coli O157:H7, **a strain of the bacteria that was apparently transmitted from feces of goats and sheep at the petting zoo.** Young children are especially at risk of developing the illness.

2017





2018
NC
State
Fair

2021
NC State Fair



Lavatories

- is hand washing easy?
- conveniently located?



Wegman's 3 in 1 Lavatory



Hand Washing

- ▶ Tempered water (80 – 110 F), soap, and disposable towels
- ▶ Demonstrate proper hand washing
- ▶ Don't assume staff know how.



CDC COVID – Take steps to protect yourself

- ▶ **Wash your hands** often with soap and water for at least 20 seconds especially after you have been in a public place, or after blowing your nose, coughing, or sneezing.
- ▶ If soap and water are not readily available, **use a hand sanitizer that contains at least 60% alcohol**. Cover all surfaces of your hands and rub them together until they feel dry.
- ▶ **Avoid touching your eyes, nose, and mouth** with unwashed hands.
- ▶ <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention>

Diapering Procedures – .2819

- ▶ Diapering procedures posted/followed?
 - Is the caregiver washing their hands and the child's hands?
 - Are gloves being used properly?
 - Cloth diapers
 - Are diapers being placed in a plastic-lined, covered container?

Diapering Procedures

- ▶ Is the diapering surface smooth, nonabsorbent, & easily cleanable?
- ▶ Is a solution of soap and water used prior to disinfecting?



Diapering and Toileting

- ▶ Is the disinfectant concentration adequate? – *500 – 800 ppm Cl or EPA registered – .2801 (7)*
- ▶ Proper contact time – *bleach solution 2 minutes other products are longer*
- ▶ Are toilets cleaned and disinfected?
- ▶ Adequate amounts of toilet paper?
- ▶ Are the children properly supervised?

Mouth Contact Surfaces

- ▶ Are sanitizing procedures being followed? – *.2822*
- ▶ Are toys easily cleanable?
- ▶ Discourage sharing of personal articles or toys
- ▶ *Floor surfaces – what about your shoes?*



Fecal Contamination

- ▶ Most important sources of contamination:
 - Hands, toys, sinks, and faucets
- ▶ High levels of fecal coliforms are more likely to occur on sinks and faucets than on other classroom surfaces (*that is why a separate hand sink is required for food preparation*).

Laborde et al., 1995

Fecal Contamination

- ▶ Infant classrooms are more often contaminated than classrooms for toddlers.
- ▶ Greater levels of contamination on staff member's hands in classrooms for infants.

Laborde et al., 1995

Reducing fecal contamination

- ▶ Wear disposable gloves
- ▶ Hand sanitizers in addition to proper hand washing
- ▶ Frequent *disinfection* of sinks and *sanitizing* of toys throughout the day.
- ▶ Knee- or foot pedal-controlled sinks
- ▶ All diapering activities conducted by one individual per room (best practice).

Laborde et al., 1995

Food Protection

- ▶ The odds of children getting diarrhea in a center where the food preparer changed diapers is **18 times greater compared to centers where the food preparer did not change diapers**
- ▶ Best Practice, staff who prepare or serve food should not change diapers and staff who change diapers should not prepare food.
- ▶ Wash raw fruits and vegetables
- ▶ Temperatures maintained

▶ Mohle-Boetani et al., 1995.

If an Outbreak Occurs – what do you do?

- Contacting, Visiting, Inspecting
- Monitoring
- Testing, Exclusion, and Cohorting
- Informing and Educating
- Child Care facility directors and school principals must report communicable diseases (*G.S. 130A-136*)

Problems with Controlling Outbreaks in Child Care Centers

- When do communicable disease outbreaks occur?
- Ease of person-to-person transmission among young children
- High secondary attack rates
 - as high as 40 percent for shigellosis
- Extended duration of outbreaks

Who to Contact



- EPI team leader
- Environmental Health Supervisor
- Regional Environmental Health Specialist
- Division of Child Development
- Communicable Disease Control Nurse
- Laboratory Personnel
- Other State Personnel (e.g., Communicable Disease Control Section)
- Local pediatricians and hospital

Containing Cases



- ▶ EPI Team
- ▶ Visit the center and
 - conduct interviews
 - gather information – standard questionnaires
 - keep your PIO informed
- ▶ In addition, visit and/or inform child care centers and child care homes in the immediate outbreak area

Containing Cases

- ▶ Exclude new admissions
- ▶ Prevent transfers to other centers
- ▶ Call area child care centers to inform them of the outbreak and instruct them not to accept children from the infected center
- ▶ Contact area pediatric practices, ERs, clinics, and other health care providers for prompt reporting of additional cases

Banning Activities

- ▶ No water table play activities
- ▶ No family-style food service .2808(G)



Line Listing

- ▶ A "line listing" is a useful tool to help organize your data. For example, case names and numbers are listed down the left hand column, and the heading row at the top of the table has more detailed information on each case such as the person's age, sex, time of onset of symptoms etc.... This type of organization provides a simple means for comparison of many characteristics, at one time. You would then look for patterns, associates or other similarities in the data.

▶ Example of a Line Listing Table

#	Name	Age	Sex	Onset	Time	Symptoms
1	Ed	2	M	10/1/11	10:00 AM	Diarrhea, abd. cramps
2	Tena	5	F	10/1/11	12:30 PM	Diarrhea
3	Kimly	2	F	10/1/11	10:15 AM	Diarrhea, nausea
4	Alan	1	M	9/30/11	10:30 PM	Diarrhea, abd. cramps

Exclusion Criteria

- ▶ Exclude cases from child care until past the infectious period and the child is asymptomatic.



15A NCAC 18A .2836 MILDLY ILL CHILDREN



- ▶ (a) Centers may provide care for mildly sick children over three months of age who meet the following inclusion criteria and staff qualifications described in Rule .2408 of this Section: (1) Centers may provide care for children with Level One symptoms as follows: (A) children who meet the guidelines for attendance in 10A NCAC 09 .0804, except that they are unable to participate in group activities and are in need of increased rest time or less vigorous activities; or (B) children with fever controlled with medication of 101° or less axillary or 102° or less orally

Online Resources

- ▶ CDC OutbreakNet Team – national surveillance on foodborne infections
<http://www.cdc.gov/foodborneoutbreaks/>
- ▶ FOCUS on Field Epidemiology, UNC-SPH
www.sph.unc.edu/nccphp

Helpful Resources



- ▶ Infection control:
<http://www.theifc.org/oldsite/Manual/res.htm>
- ▶ Control of Communicable Diseases Manual, Chin, J. (2000)
- ▶ American Academy of Pediatrics Red Book
